CLAIMS

What is claimed is:

1. A control valve module (14') for a fuel injector assembly (10) for an internal combustion engine, the fuel injector assembly having a pump body (22') with a high-pressure passage (30) and a spring cage assembly (16) with a high-pressure passage (52), wherein the control valve module (14') is adapted to be interposed between the pump body (22'), with an upper edge (34') facing the pump body and a lower edge (35' facing the spring cage assembly (16), and wherein the control valve module (14') further has a facing recess (104) to accommodate at least a portion of a stator assembly (36) with a cylindrical chamber (42) extending into the valve module from the facing recess (104), with an annulus (106) surrounding the cylindrical chamber, and with a high-pressure passage (108), characterized by:

the control valve high-pressure passage (108) having a first portion (110) extending linearly between the annulus (106) and the upper edge (34') where it is positioned to communicate with the pump body high-pressure passage (30), and a second portion (112) extending linearly between the annulus (106) and the lower edge (35') where it is positioned to communicate with the spring cage assembly high-pressure passage (50).

2. A control valve module (14') according to claim 1 wherein the first portion (110) and second portion (112) extend relative to each other at an angle other than 180 degrees.

3. A control valve module (14') according to claim 1 wherein the pump body (22') is provided with a recess (102) to accommodate at least portion of the stator assembly (36) so that the recess (102) and the facing recess (104) fully enclose and retain the stator assembly (36) when the control valve module (14') is assembled to the pump body (22').

4. A fuel injector assembly (10) for an internal combustion engine, the fuel injector assembly having a pump body (22') with a high-pressure passage (30), a spring cage assembly (16) with a high-pressure passage (50), and a control valve

module (14') between the pump body (22') and the spring cage assembly (16), with an upper edge (34') facing the pump body and a lower edge (35') facing the spring cage assembly, and wherein the control valve module (14') has a facing recess (104) to accommodate at least a portion of a stator assembly (36) with a cylindrical chamber (42) extending into the valve module (14') from the facing recess (104), with an annulus (106) surrounding the cylindrical chamber (42), and with a high-pressure passage (108), characterized by:

the control valve high-pressure passage (108) having a first portion (110) extending linearly between the annulus (106) and the upper edge (34') where it is positioned to communicate with the pump body high-pressure passage (30), and a second portion (112) extending linearly between the annulus (106) and the lower edge (35') where it is positioned to communicate with the spring cage assembly high-pressure passage (50).

5. A fuel injector assembly (10) according to claim 4 wherein the pump body (22') has a recess (102) to accommodate at least portion of the stator assembly (36) so that the recess (102) and the facing recess (104) fully enclose and retain the stator assembly (36).

6. A fuel injector assembly (10) according to claim 4 wherein the first portion (110) and second portion (112) extend relative to each other at an angle other than 180 degrees.

7. A method of making a control valve module (14') for a fuel injector assembly (10') for an internal combustion engine comprising the steps of:

providing a metal block with a machined upper edge (34') and machined lower edge (35');

machining a facing recess (104) into the upper edge (34') with a cylindrical chamber (42) extending therefrom;

drilling a first portion of a conduit from the upper edge (34') to an intersection point at the cylindrical chamber (42);

drilling a second portion of a conduit from the lower edge (35') to the intersection point; and

electro chemically machining an annulus (106) surrounding the cylindrical chamber (42) at the intersection point.